

**North
West
Water**

RF(1)A12

25th February, 1985

Dawson House, Great Sankey,
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Telephone Penketh (092 572) 4321

To: Members of the West Cumbria Special
Fisheries Advisory Group
(Messrs T.A.F. Barnes (Chairman);
F. Bunting; E.P. Ecroyd; A. Gleaden;
A. Moffat; Dr. A. Caldicott and
S.G. Payne).

Dear Member,

A meeting of THE WEST CUMBRIA SPECIAL FISHERIES ADVISORY GROUP will be held at 2.15 p.m. on MONDAY, 4TH MARCH, 1985, at the SOUTH CUMBRIA AREA OFFICE of the RIVERS DIVISION, BEATHWAITE, LEVENS, CUMBRIA for consideration of the following business.

Yours faithfully,

W.H. CRACKLE,
Secretary and Solicitor

A G E N D A

1. Apologies for absence.
2. Minutes of the meeting held on 9th March 1983.
3. Public Water Supplies in West Cumbria.
4. Proposals for Water Supply for British Nuclear Fuels.
5. Ennerdale and River Ehen.
6. Any other business

MINUTES OF A MEETING OF THE
WEST CUMBRIA SPECIAL FISHERIES ADVISORY GROUP
9TH MARCH, 1983

Present: T. A. F. Barnes (Chairman)
F. Bunting E. P. Ecroyd
Dr. A. Caldicott (co-opted) A. Gleaden
A. Moffat

1. APOLOGIES FOR ABSENCE

None had been received.

2. MINUTES OF THE LAST MEETING

The minutes of the last meeting of the Committee held on 28th July, 1982 were approved as a correct record.

3. MATTERS ARISING

The Group were advised that since the last meeting, British Nuclear Fuels Ltd (BNFL) had informed the Authority that they had decided to develop the River Calder and groundwater (including mine water) in the area, in conjunction with existing sources, and in this way to meet all their requirements for water for the foreseeable future.

Details of BNFL's new proposals which called for a major review of the best way of providing for the present and future water needs of West Cumbria were contained in a report to the Water Management Committee on 21st February 1983 which is appended to these minutes.

4. FISH PASS - YEARL WEIR - RIVER DERWENT

The Group noted that discussions were taking place with British Steel on the question of modifying the fish pass or replacing it with a new one. They were advised however that whichever solution was adopted arrangements would have to be made to reduce the high velocity of water presently entering the fish pass.

Consulting Engineers had been retained by the Authority and a further report would be made to the Group as soon as firm proposals were available.

5. FISH PASS - ENNERDALE LAKE - RIVER EHEN

The Group considered the question of the present fish pass now that it was no longer proposed to raise the level of the Lake. They were advised that although the pass had been inoperable in times of drought, this was not considered as presenting any particular problems, as fish movement was most unlikely during periods of very low flow.

They were further advised that to guarantee continuity of access

throughout drought periods would involve the construction of a complex pump-fed fish pass costing in the region of £100,000. The officers could not recommend this in the circumstances.

Although the Group did not all agree that the inoperability of the present fish pass presented no problems - there were occasions when there was water in the river for fish to move, but no water in the fish pass for them to use - they accepted the principle that expenditure in the region of £100,000 on a new fish pass could not, in all the circumstances, be justified.

6. RIVER CALDER ABSTRACTIONS AND AUGMENTATION FROM BOREHOLES

The Group considered a report of the investigation by British Nuclear Fuels Ltd (BNFL), in collaboration with the Authority, into the feasibility of augmenting flows in the River Calder to support their abstractions at Calder Hall and Calder Bridge, by pumping to the river from boreholes higher up in the Calder Valley.

A matter of concern to the Authority had been how much water pumped to the river would find its way back to the aquifer thereby reducing the net gain to the river; and because of this BNFL had been restricted to abstracting from the river only 50% of the water they had pumped into it.

Tests had shown however that this figure of 50% was about right; because although the net gain to the river had been found to decline with time as the groundwater level fell, abstraction of 50% of water pumped to the river would not result in any diminution of river flows in drought conditions unless the drought exceeded 100 days. To put this in context, the drought of 1976 had lasted for 61 days.

RECOMMENDED

That the 50% rule be adopted in any future scheme for increased abstraction by BNFL from the River Calder supported by groundwater, subject to review in the light of any representations received following any licence applications.

7. RIVER EHEN - AUGMENTATION BY MINE WATER - BNFL

The group considered a report on the approach by British Nuclear Fuels Ltd (BNFL) to the Authority regarding the possibility of augmenting the flow in the River Ehen, from which they presently abstract 4mgd (18.2 Ml/d) at Braystones, by pumping from the Florence Mine, to support increased abstractions. Although no water quality problems were at present envisaged, further pumping tests would be needed to ensure that there would be no deterioration in water quality at higher pumping rates.

The Group were advised that if such a scheme could ultimately be recommended, adequate protection would need to be given to the River Ehen downstream of Braystones and the officers recommended a prescribed flow, measured at Braystones of 35 mgd (159 Ml/d). This would ensure that the additional abstraction (suggested as 2.4 mgd) would never result in the residual flow downstream of the abstraction point falling below the bottom end of the migration flow range.

The Group however considered that a prescribed flow of 35 mgd (159 Ml/d) was too low and that consideration should be given to prescribing a higher flow based on angling flows and not necessarily on migration flows.

RECOMMENDED

That the officers consider the Group's representations and report back to a future meeting.

8. WASTEWATER - TEMPORARY INCREASED ABSTRACTION BY BNFL

At their meeting on 25th June 1982 when considering the application by British Nuclear Fuels Ltd (BNFL) for temporary increased abstraction from Wastwater, the Group had recommended that BNFL should be required to install a fish counter on the River Irt to monitor any effects of the increased abstraction.

The Group were now however advised that the cost of a compound Crump weir with fish counting facilities would be in excess of £75,000, and even a crude gabion based structure with only a limited life would cost between £25,000 and £30,000.

The Officers therefore advised that in view of the limited temporary increased abstraction (until 31st December 1987) and the fact that although BNFL had applied for an immediate increase of 2.4 mgd they had only been granted increases as set out hereunder, such expenditure could not be justified.

1983	1.6 mgd	450 million galls/year
1984/1985	2.0 mgd	520 million galls/year
1986/1987	2.4 mgd	700 million galls/year

The Group expressed their disappointment that fish counting facilities could not have been provided by BNFL somewhere on the River Irt, but reluctantly accepted the fact that in all the circumstances, this matter could not be pursued further at present.

NORTH WEST WATER AUTHORITYWATER MANAGEMENT COMMITTEE21ST FEBRUARY, 1983WEST CUMBRIA WATER SUPPLIES

BACKGROUND

1. In February 1982 Members were informed of the decision of the Secretary of State for the Environment, following a public inquiry in 1980, rejecting the Authority's proposals to make additional supplies available from Ennerdale, and also the proposal of British Nuclear Fuels Limited (BNFL) to take more water from Wastwater.
2. Since then a thorough re-appraisal has been carried out of the water supply requirements of West Cumbria, including those of BNFL, and the Authority has investigated ways of meeting those requirements. The favoured scheme was for the abstraction of water from the River Derwent, near Workington, together with reduced scale improvement works at Ennerdale.
3. At the same time, BNFL have carried out pumping tests on boreholes in the River Calder Valley, which have been monitored by the Authority. A further development has been the cessation of deep mining in the Beckermeth mine, which has resulted in a great improvement in the quality of water that has now become available for abstraction from the mine complex for supply purposes.
4. Members have been kept informed of progress by reports to the Regional Development Advisory Sub-Committee in July 1982, and to the Water Management Committee in September, 1982.

PREVIOUS UNDERSTANDING OF BNFL POSITION

5. On the basis of information available at the time of the September 1982 report, following discussions with BNFL, it was expected that the Company would require a direct supply of untreated water from Ennerdale to meet their top quality needs (known as R1 water) and that their lower quality requirements would be met by the development of local groundwater sources. The BNFL take from Ennerdale would reduce its availability for public water supplies, which are already in deficit in the area, and will become more so as the demands of domestic and industrial consumers increase. It was to meet these deficits that the scheme based on the River Derwent would be developed.
6. In October 1983 the Authority granted BNFL a temporary licence to abstract increased quantities of water from Wastwater, to meet their requirements for R1 water until the new supplies became available. The quantities authorised for abstraction under the temporary licence were strictly limited, and the authorisation will expire on the last day of 1987. In accepting this time limit BNFL have recognised the need to have their new R1 supplies available by that date.

CHANGE IN BNFL POSITION

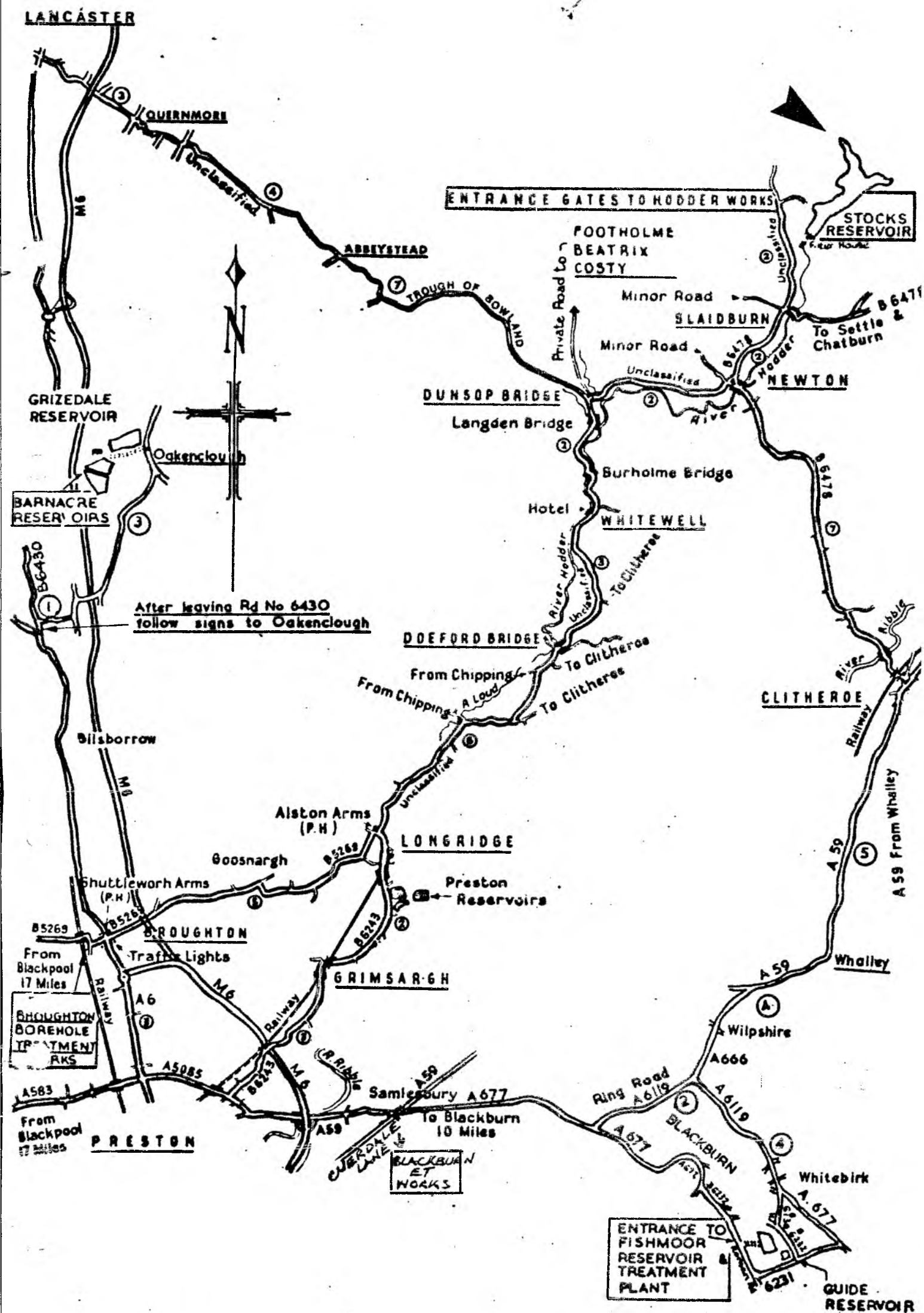
7. The Authority's review of the position and the development of proposals were approaching completion in November 1982, and preparations were in hand for formal consultations with planning authorities and other interested parties about the works at the Derwent and at Ennerdale. This would have been followed by a report to Members about the proposals. However BNFL then intimated that, in view of the apparent success of the Calder Valley groundwater tests, and the availability of minewater they were considering the feasibility of treating River Calder water to meet their R1 requirement, and of developing groundwater for their lower quality supply. As this would radically affect the scale and nature of the Authority's works that would be required at the Derwent it was necessary to defer the formal consultations and finalisation of the Authority's proposals until BNFL were able to clarify their position.
8. BNFL have now formally notified the Authority of their Board's decision to seek to develop the River Calder and groundwater (including minewater) in the area, in conjunction with their existing sources, and in this way to meet all their requirements for water for the foreseeable future. The Company have explained that they have been prompted to make this change in approach by the two very significant developments that have taken place since the time of the public inquiry. These are the cessations of deep mining at Beckermest, resulting in a improvement in mine-water quality, and the successful pumping trials of the Calder Valley boreholes. They have also alluded to the high cost to the Company of a Derwent-based scheme.
9. The revised BNFL position involves them in using treated Calder water for their R1 supplies. This contrasts with the previous position of the Company, as reflected in the Secretary of State's decision letter at the end of 1981, that "The evidence indicates that some of the extra water needed by BNFL requires to be top quality (R1) water. The Inspector (on the advice of the Chemical Assessor) considers that these R1 requirements can only realistically be met by abstractions direct from Ennerdale or Wastwater or both and that it would be unwise to use any other source. The Secretary of State accepts this advice." This had continued to be the Authority's understanding during renewed contacts with BNFL in 1982 following the decision letter. Despite this, the Company now express themselves "confident that conversion of Calder water by demineralisation or other means to R1 quality is viable and would be acceptable ..."
10. On the basis of the revised information provided by BNFL, their new proposals for obtaining their water supplies seem sensible, subject to further proof of the availability of groundwater. Authorisation of proposals by the Authority would be subject to the standard licensing procedures. BNFL have already been informed that the Authority, in its licensing role, will expect the Company to progress their new proposals so that replacement R1 supplies will be available before expiry of the temporary Wastwater licence at the end of 1987.

THE WAY FORWARD

11. The Authority's planning must now proceed on the basis that BNFL

will implement their new proposals. As already indicated, the proposals mean that BNFL will not need any water supplies from the Authority in West Cumbria for the foreseeable future. This new situation calls for a major review by the Authority of the best way to provide adequate public water supplies for the present and future needs of domestic and industrial consumers in West Cumbria. In view of the smaller quantities of water now involved, because of BNFL's intentions to develop other sources, schemes which would previously not have been adequate can now be considered.

12. The new situation is being urgently reviewed. The outcome will be reported to the Committee as soon as possible.



Based upon the Ordnance Survey Map with the sanction of the Controller of H.M. Stationery Office.

RF(1)A6

MINUTES OF A MEETING OF THE
REGIONAL FISHERIES ADVISORY COMMITTEE
HELD ON 4 FEBRUARY 1985

Present: T.A.F. Barnes (Chairman)

R. Bailey	A.G.R. Brown
F. Bunting	J.M. Croft
P. Ecroyd	J.H. Fell
C. Holland	R.D. Houghton
B. Irving	G. Mann
P. Neil	A. Richardson
J. B. Robinson	

36. APOLOGIES FOR ABSENCE

Apologies for absence were received from Mr. J. S. Bailey, Bryan Oldfield, and Dr. Hugh Thomas.

37. MINUTES OF THE LAST MEETING

Members were informed that a paper about coarse fish stocking had been prepared by the Regional Fisheries Officer and was due to be considered by the Regional Management Committee at their next meeting. Mr. Crowther undertook to advise Regional Management that this Committee had asked for copies of the paper to be sent to the fisheries liaison meetings as soon as possible.

RESOLVED:

That the minutes of the meeting of the Committee held on 15 October 1984 be approved as a correct record and signed by the Chairman.

38. LOCAL FISHERIES LIAISON MEETINGS

Members discussed a report which suggested that the Committee might wish to reconsider the number of liaison meetings held each year. Members were divided on this matter, and although the majority were in favour of additional meetings, it was argued that the number of items being submitted for discussion by the consultative associations did not justify extra meetings.

RESOLVED:

- (i) that this matter be included on the agenda for the next fisheries liaison meetings, and that this Committee review the situation after those liaison meetings, taking into account the number of items submitted by consultative associations for discussion.
- (ii) that the next fisheries liaison meetings be held on the following dates:-

Northern area - Monday 29 April 1985.
Southern area - Wednesday 1 May 1985.

39. FISHING LICENCE DUTIES 1986

Members were advised that the officers had recommended that fishing licence duties be increased by some 5% for the year 1986. This figure was in line with the current rate of inflation.

RESOLVED:

That copies of the report be presented to the Fisheries Liaison meetings in April/May, for comment, and that their comments be taken into consideration by this Committee at its next meeting when formulating observations for submission to the Board on 10 June 1985.

40. LEAD AND SWANS

Members considered a report recommending that the use of lead shot on fishing waters directly under the Authority's control should be banned. Whilst expressing sympathy with the problem of swan deaths by lead poisoning, and accepting that lead shot may eventually be banned, Members felt that the present substitutes for lead shot were unsuitable and did not provide an acceptable alternative.

RECOMMENDED:

- (i) That in the absence of a suitable alternative to lead shot, no action be taken to ban the use of lead shot on fishing waters directly under the Authority's control.
- (ii) That information about the dangers to swans of lead shot be disseminated to anglers.

41. FYKE NETS

The Committee received a request from Mr. Evans of The Stone Jetty, Marine Road, Morecambe, for permission to use fyke nets during the period 1 April to 25 June 1985 for the capture of eels. Members were reminded that the reason for Mr. Evans' application was that he wished to avoid having a large mussel purification tank lying idle during the close season for mussels, and although Mr. Evans did receive permission last year, other fishermen who made similar applications were refused because it was considered that they had not justified their applications.

RECOMMENDED:

That subject to the same conditions as in 1984, MAFF consent be sought to enable Mr. D. Evans to use fyke nets to take eels during the months of April to June 1985 inclusive.

42. GRASS CARP FIELD TRIALS IN THE LANCASTER CANAL

Members received a progress report on the current experiments into control of weed using grass carp being carried out by Liverpool University on the Lancaster Canal. The results suggested that, for effective weed control, it was essential to have a high density of

grass carp present during the spring re-growth period, but that for the rest of the year control could be maintained by much lower densities. The University intended to continue the experiment throughout 1985.

43. AUTHORITY SCHEMES FOR THE BENEFIT OF FISHERIES AND FISHING

Members noted a report which gave details of progress made under the Fisheries Improvement Grant Aid scheme and the Fisheries Equipment Loan scheme. Members were asked to remind their associations that the schemes were in operation and to encourage fishing clubs to take advantage of the schemes.

44. RESERVE BAILIFFS

Members were advised that the reserve bailiffs scheme which had been introduced in the northern part of the region in the late Spring of 1984 had proved to be very successful and an effective deterrent to poaching activity. Although the geographical allocation of the reserve bailiffs required slight alteration, the fisheries inspectors involved had been well satisfied with the working of the scheme.

RECOMMENDED:

That the reserve bailiff scheme continue in 1985, with extension to other areas where appropriate.

45. RIVER LUNE - TOTAL AVAILABLE RESIDUAL CHLORINE (TARC)

Members noted a report which gave details of work carried out by Lancaster University to identify levels of TARC existing in the River Lune. Scientific staff from the Authority had discussed the report with University staff and agreed to co-operate with the investigations into this problem.

46. RETIREMENT OF REGIONAL FISHERIES OFFICER

Mr. T.A.F. Barnes informed members that the Regional Fisheries Officer, Mr. J. D. Kelsall, was due to retire from the service of the Authority on the 11 March, and that this was the last Regional Fisheries Advisory Committee meeting which he would be attending. He spoke briefly about Mr. Kelsall's career in both the fisheries and military spheres, and in expressing the Committees thanks for his valuable service and their wishes for a long, happy and well deserved retirement, he hoped that Mr. Kelsall would now have the time to enjoy plenty of first class fishing.

47. GRANTS TO FISHERIES CONSULTATIVE ASSOCIATIONS

Mr. R.G.A. Brown reported that at a recent national fisheries conference, he had been informed that, with the exception of North West Water Authority, all other water authorities gave grants to the fisheries consultative associations in their area towards the running expenses of the association. He asked that this matter be placed on the agenda for discussion at the Fisheries Liaison meeting (South).

NORTH WEST WATER

WEST CUMBRIA SPECIAL FISHERIES ADVISORY GROUP

4 MARCH 1985

PUBLIC WATER SUPPLIES IN WEST CUMBRIA - PROGRESS REPORT

1. In considering the business items on today's agenda, the Special Fisheries Advisory Group may find it helpful, as background, to know the present position on the development of public water supplies in West Cumbria.
2. This information is given in the attached copy of a report put to the Cumbria Water Services Council on 15 January 1985. The report also explains briefly (paragraphs 2 and 3) the present situation on water supplies for British Nuclear Fuels, which is dealt with more fully under item 4 of this agenda.

CUMBRIA WATER SERVICES COUNCIL

15 JANUARY 1985

PUBLIC WATER SUPPLIES IN WEST CUMBRIA

PURPOSE

1. The purpose of this report is to keep the Cumbria Water Services Council informed about progress in the development by the Water Authority of a major scheme for improving public water supplies in West Cumbria. The report includes information on the approach which the Authority is adopting to the works which will be needed in the environmentally sensitive Ennerdale area. A similar report is being presented to the Water Recreation and Conservation Committee.

BACKGROUND

2. Following a public inquiry in 1980, the Secretary of State announced at the end of 1981 that, on environmental grounds, he had rejected proposals by the Authority and British Nuclear Fuels (BNF) for obtaining increased water supplies for West Cumbria from Ennerdale Water and Wastwater. The Authority, with the co-operation of BNF, immediately embarked on investigating other sources of water supplies. Early in 1983, BNF decided to develop its own sources, based on the Rivers Calder and Ehen supported by groundwater, including minewater.
3. In view of BNF's short term needs during the period when they were developing these sources, the Authority had in late 1982 granted the Company a temporary licence, expiring no later than the end of 1987, for increased abstractions from Wastwater. This temporary arrangement was suggested by the Secretary of State when he rejected the Ennerdale-Wastwater scheme.

PROGRESS ON PUBLIC WATER SUPPLIES

4. When the Authority was planning for the provision of supplies for BNF as well as additional public water supplies, the only feasible method of developing a source to supply the quantities involved was an extension of the Authority's existing River Derwent scheme at Workington. Since BNF's withdrawal in 1983, the Authority's planning has proceeded on the basis of the provision of additional public water supplies only. The smaller quantities involved have opened up the option of the development of local groundwater, either alone or in conjunction with a scheme on the Derwent smaller than originally envisaged.
5. Detailed appraisal of the groundwater option has been carried out. This has involved investigating the aquifers by means of trial boreholes. The original investigation programme envisaged that sufficient information would be obtained to form the basis of recommendations to the Board during 1984. However, the investigations have turned out to be difficult and prolonged. It is now expected that it will be Spring of this year before recommendations can be made to the Board on the source of additional water supplies. Present indications (based on

preliminary information about the groundwater) are that the groundwater option would be the most economic, subject to establishing the availability of sufficient quantities of groundwater of adequate quality at suitable locations. It is expected that the engineering works for the groundwater option would be comparatively unobtrusive.

ENNERDALE

6. In addition to the scheme to be proposed for providing additional water supplies, certain improvement works are needed at Ennerdale Water, but on a much smaller scale than the works formerly envisaged. The works which were proposed by the Water Authority at the public inquiry in 1980 were dominated by the raising of the embankment at Ennerdale Water so as to raise the water level by 1.22 metres (4 feet) and so increase the yield. In contrast, the present proposals do not involve any significant works on the embankment and will not result in raising the level of the lake.
7. The works proposed now consist of new intake arrangements, underwater, at the lake; an underground pipeline/tunnel to the treatment works; a small pumping station (largely concealed) for compensation water; a new treatment works; and duplication of part of the underground supply main near Ennerdale village. While previous requirements on reservoir safety still exist, advances in technology now enable them to be met by comparatively minor works, some of which have already been carried out. These proposals are independent of the eventual choice (para. 4) between the groundwater and Derwent options. The Authority has engaged consultants to advise on the locations and appearance of the works and on landscaping and tree planting.
8. Despite the much reduced scope of the works at Ennerdale, the environmental sensitivity of the locality is bound to give rise to close interest in the proposals - by the local planning authorities who will be most involved, namely Copeland Borough Council and the Lake District Special Planning Board, as well as by certain other bodies. Informal soundings have therefore recently been taken with senior officers of the two planning authorities to obtain an indication of likely planning attitudes.
9. As a result of these exploratory discussions the Authority has agreed to submit an informal statement of its proposals for Ennerdale and, as background, an outline of its probable intentions for additional public water supplies in West Cumbria. The responses from the planning authorities will be valuable guide in the preparation of the subsequent formal detailed planning application(s). Cumbria County Council and Allerdale District Council are being kept informed of the Authority's proposals.

CONCLUSION

10. The Council is asked to note this report.

NORTH WEST WATER AUTHORITYWEST CUMBRIA SPECIAL FISHERIES ADVISORY GROUP4th March, 1985PROPOSALS FOR WATER SUPPLY FOR BRITISH NUCLEAR FUELS

This report summarises the present position regarding the investigations and proposed developments by British Nuclear Fuels (BNF), as they affect rivers in West Cumbria.

Wast Water.

British Nuclear Fuels are authorised to abstract 4,000,000 gallons per day from Wast Water in accordance with their existing Licence of Right which was issued in 1966. A temporary licence was also issued to the Company in 1982 following the "Two Lakes" Inquiry which authorises an additional abstraction of 2,000,000 gallons per day upto 31st December, 1985, increasing to 2.4 million gallons per day during the period 1st January, 1986 to 31st December, 1987, at which date the licence will expire. Both the Licence of Right and temporary licences are subject to the same requirements regarding the discharge of compensation water into the River Irt during periods of low flow.

The authorisation of an abstraction in excess of 2,000,000 gallons per day at 31st December, 1985 is conditional upon the Authority being satisfied that the additional quantity is a reasonable requirement. In this respect the Company have recently stated that it is now unlikely that the full additional quantity will be required and that the present total authorisation of 6,000,000 gallons per day will meet their requirements until 31st December, 1987. On expiry of the temporary licence at the end of 1987 British Nuclear Fuels will revert to an abstraction of 4,000,000 gallons per day from Wast Water in accordance with the Licence of Right, their additional requirements then being met by the use of mine water and the Calder Valley boreholes.

Calder Valley Boreholes

In 1979 British Nuclear Fuels were granted a five year consent by the Authority to carry out tests on boreholes near Calder Bridge in connection with their proposed Calder Valley Augmentation Scheme. The object of this scheme is to improve the reliability of the Company's existing River Calder abstractions by using borehole water to augment the river during periods of low flow. The Company's licences for abstraction from the River Calder at Calder Bridge and Calder Hall were also varied in 1979 to authorise on a temporary basis an additional abstraction of 50% of the quantity of water discharged into the River Calder, subject to a maximum of 1.5 million gallons per day. As reported to the Group in March 1983 the Authority has carried out extensive tests on the effects of abstractions on local private water sources and on river flows and is satisfied that the scheme can now be authorised on a permanent basis.

On the 9th March 1983 the Group recommended :

"That the 50% rule be adopted in any future scheme for increased abstraction by BNFL from the River Calder supported by groundwater, subject to review in the light of any representations received following any licence applications."

British Nuclear Fuels have now applied for licences to abstract from the Calder Valley boreholes and for permanent variations of the River Calder abstraction licences in accordance with the abstraction conditions which have applied during the trial period. An application for variation of the River Calder licences has also been made to allow the Company to abstract at Calder Bridge or Calder Hall the 1.5 million gallons per day which at present can only be abstracted at Calder Bridge. The overall effect of these variations will be an increase in river flows, particularly during periods of low flow, between the borehole sites and Calder Hall.

In response to public advertising of the application one representation has been received concerning the effect of abstraction from the boreholes on the environment and on local water supplies. However, having regard to the findings of the five year investigations, the Authority is of the opinion that such adverse effects will not occur.

Mine Water and the River Ehen

As part of their development of groundwater supplies British Nuclear Fuels are proposing to utilise the availability of mine water in the Egremont area. Water from the Florence Mine is at present discharged to the River Ehen via the Black Beck in connection with mine de-watering operations. If this mine were to cease production de-watering would consequently be discontinued and the existing discharge to the River Ehen would cease.

British Nuclear Fuels wish to guarantee this flow to the River Ehen with the option of abstracting an equivalent quantity from the river at Braystones. The quality of the mine water is reasonable and the present discharge arrangements have not so far caused any problems in this respect. The Company's plans to maintain the mine water discharge, irrespective of the fate of the mine, should not adversely affect river quality or quantity.

The alternative to an abstraction via the River Ehen would be the abstraction of mine water by British Nuclear Fuels directly to supply, in which case the benefit to river flows would be lost.

In March 1983 the Group considered the question of a prescribed flow relating to the Braystones abstraction. This was on the assumption that BNF would in due course apply for a licence which would allow them to abstract more than the present 4 mgd (18 Ml/d) from the natural flow of the River Ehen, with low flows being augmented by pumping minewater when necessary. Whilst no application has yet been received from BNF, it is understood that their present proposals are to continue the continuous pumping of minewater. If they merely propose to re-abtract from the river the quantity pumped from the mine, the question of a prescribed flow will not arise.

Other Groundwater Investigations

British Nuclear Fuels are at present seeking to obtain an additional 7 megalitres per day from groundwater near to their Brow Top Reservoir. A trial investigation has been carried out and boreholes are now being drilled. Black Beck and Kirk Beck are within 2 kilometres of the site and the question of any effect on the flow of these streams has been considered. The hydrogeology of the area indicates that no effects will be felt, but extra monitoring facilities have been installed to allow more detailed work to be carried out.

A separate borehole is being drilled at British Nuclear Fuels' surface water intake at Calder Bridge, within 40 metres of the River Calder. The proving test yield was quite good and the quality of the water indicates that only groundwater is being abstracted. Further tests have been requested with the proviso that some restriction on licensed quantities may be necessary if there is any effect on river flow.

NORTH WEST WATER AUTHORITYWEST CUMBRIA SPECIAL FISHERIES ADVISORY GROUP4th March, 1985ENNERDALE AND THE RIVER EHEN

This report reviews the previous discussions in the Group, particularly with regard to the fish pass at the Ennerdale weir, and considers whether any further recommendations should be made in the light of the current Ennerdale proposals.

A report on the existing fish pass was considered by the Group on the 9th March 1983 and the relevant Minute reads as follows :-

"The Group considered the question of the present fish pass now that it was no longer proposed to raise the level of the Lake. They were advised that although the pass had been inoperable in times of drought, this was not considered as presenting any particular problems, as fish movement was most unlikely during periods of very low flow.

They were further advised that to guarantee continuity of access throughout drought periods would involve the construction of a complex pump-fed fish pass costing in the region of £100,000. The officers could not recommend this in the circumstances.

Although the Group did not all agree that the inoperability of the present fish pass presented no problems - there were occasions when there was water in the river for fish to move, but no water in the fish pass for them to use - they accepted the principle that expenditure in the region of £100,000 on a new fish pass could not, in all the circumstances, be justified."

The position was also accepted by the Northern and Regional Fisheries Advisory Committees.

In reviewing this Minute in the light of the present proposals it should be noted that these proposals will not adversely affect the performance of the present pass in any way. Indeed, there will be a degree of improvement resulting from the reduced rate of abstraction from the lake for public supply. (Whilst it is proposed to continue to take up the 79 megalitres per day (Ml/d) when the lake is overflowing, the rate would be reduced to 53 Ml/d after the lake fell below this level.) This will reduce the extent and duration of the lake draw-down and shorten any periods when the pass is not fully effective.

In considering these matters we should not lose sight of the improvements which were achieved in the early 1970's. Up to that time there had been no fish pass at Ennerdale and the compensation water amounted to only 4 mgd. Moreover this was discharged downstream of the treatment works leaving some 400 yds of river dry whenever the lake was not overflowing.

The agreement reached between the then South Cumberland Water Board and the River Authority was that the quantity to supply could be increased from 14 to 17 mgd provided the compensation water was increased, by the same amount, to 7 mgd and discharged at the head of the river partly through, and partly at the foot of, a new fish pass to be constructed at the weir.

It was subsequently agreed that the quantity to supply could be increased to 17.5 mgd (79 Ml/d) subject to the flow of Ben Ghyll being diverted into the lake. The 17.5 (79 Ml/d) was not seen as a reliable yield; it was the maximum abstraction rate when sufficient water was available. The licence required the abstraction to be made "by gravity" and in recent years drought orders have had to be obtained to permit pumping so as to maintain both the public supply at a rate higher than the reliable yield, and the required compensation discharge. Development of other sources of supply for West Cumbria will allow the rate of abstraction to be reduced to the reliable yield whenever the lake falls below weir level.

Having regard to these circumstances, and the very limited value of any pass at the weir during drought periods, as previously discussed in the Group, the officers' view remains that the expenditure of over £100,000 on a new pass cannot be justified.

In the unlikely event that any quantity of migratory fish should accumulate below the weir at times of very low flow, when the fish pass has dried out, it would be a simple matter to pick them up by electric fishing and to pass them over the weir manually.

